

IOWA HIGHWAY RESEARCH BOARD (IHRB)

Minutes of March 28, 2014

Regular Board Members Present

A. Abu-Hawash
K. Jones
R. Younie
S. Okerlund
D. Schnoebelen
R. Kieffer
D. Miller

W. Weiss
P. Assman
K. Mayberry
L. Roehl
R. Fangmann
T. Wipf

Alternate Board Members Present

B. Braun for R. Knoche
P. Mouw
J. Thorius

L. Bjerke
M. Cox

Members with No Representation

M. Kennerly

Secretary - M. Dunn

Visitors

Leighton Christiansen
Linda Narigon
Wayne Sunday
Mike Todsén
Mike Nop

Iowa Department of Transportation
Iowa Department of Transportation
Iowa Department of Transportation
Iowa Department of Transportation
Iowa Department of Transportation

The meeting was held at the Iowa Department of Transportation Ames Complex, Materials East/West Conference Room, on Friday, March 28, 2014. The meeting was called to order at 9:00 a.m. by Chairperson Kevin Mayberry with an initial number of 14 voting members/alternates at the table.

Minutes

Motion to approve Minutes from the February 28, 2014 meeting

Motion to Approve by W. Weiss; 2nd D. Schnoebelen
Motion carried with 14 Aye, 0 Nay, 0 Abstaining.

FINAL REPORT TR-622, “Maintenance and Design of Steel Abutment Piles in Iowa Bridges”,
Mike Todsén, Iowa Department of Transportation, (\$123,426)

BACKGROUND

Since their initial use in the early 1900's, driven steel piles have proven to be an economical and effective system for the support of bridge abutments and piers and consequently are used extensively throughout the nation's bridge inventory. Historically, many bridge owners and designers have not made provisions for corrosion protection of steel piles used in this application. This lack of corrosion protection has been based on the assumption that with little oxygen available, corrosion of the buried piles would occur at a very slow rate and could be ignored, or addressed by selecting a cross section of slightly greater area than that required to resist structural demands. During recent inspections and investigations, however, Iowa DOT has observed corrosion at upper portions of steel piles, where erosion and soil consolidation have created voids between the soil and the bottom of abutment footings. The presence of oxygen, moisture, and deicing salt laden water has accelerated the corrosion rates of piles at these locations. Other bridge owners have also observed this problem: five states responding to a late 1990's survey of state DOTs regarding problems associated with steel pile corrosion indicated that they had observed corrosion of exposed portions of steel piles directly below bridge abutments (Beavers and Durr 1998).

OBJECTIVES

The objectives of this project are summarized as follows:

- ✓ Identify effective methods of addressing the problem of pile corrosion in existing bridges.
- ✓ Identify an effective strategy to limit steel pile corrosion in new bridges in the future.

Motion to Approve by A. Abu-Hawash; 2nd K. Jones

Motion carried with 14 Aye, 0 Nay, 0 Abstaining.

DISCUSSION

Q. When you speak about aluminizing is there shops in the Midwest that we can utilize?

A. It is a normal metalizing process, so it is possible, provided that the lengths of the pile are short enough to fit in the tanks. It is likely to be more costly since it will add a step into the delivery process. Normally the pile is delivered directly to the job site from the supplier. Now they will have to go from the supplier to the metalizer before being shipped to the job site. This could cause some delays in the process.

VOTING for FY2014-2015 Project Topic Prioritization

Voting Results (Top 10)

- ✓ 4.03 Flood-Estimation Comparisons for Small Drainage basins in Iowa (37)
- ✓ 11.04 Guidance on Traffic Sign Effectiveness, Implementation, and removal (30)
- ✓ 1.03 Frost Boil Treatments, Innovative Construction and Maintenance Techniques (25)
- ✓ 1.02 Feasibility of Gravel Road recycling (21)
- ✓ 8.02 Estimation of Dyed fuel vehicle roadway Impacts (17)
- ✓ 1.01 Embankment Quality ad Assessment of Moisture Control Implementation (17)
- ✓ 5.01 Investigation into Shrinkage of High-Performance Concrete Used for Iowa Bridge Decks and Overlays: Phase II (16)
- ✓ 7.01 Concrete Overlay Performance (15)
- ✓ 11.01 Temporary Traffic Control Plans for Local Agency Improvements (15)
- ✓ 7.06 Prevention of Longitudinal Cracking in Iowa Widened Concrete Pavement (15)

Typically, the top 10-12 projects are funded annually. RFPs for the first 5-6 projects will be developed for review in the May or June meeting.

FHWA STIC Incentive funds for 2014

The Federal Highway Administration (FHWA) State Transportation Innovation Council (STIC) Incentive program provides resources to help STICs make innovations standard practice in their States. Under the program, technical assistance and limited funds are available to support or offset the costs of standardizing innovative practices in a State transportation agency (STA) or other public sector STIC stakeholder. The funding opportunity is \$100,000 per State per year. Funding requires a 20% match.

A brief presentation was given on the program and there was a brainstorming to produce a short list of potential topics for further development. The following ideas were generated and will be developed for further discussion in the April meeting.

- ✓ Use of 3D in bridge design
- ✓ Implementation of the MIT-T2 thickness gauge for PCC pavement thickness assessment
- ✓ Development of standards for accelerated bridge design components
- ✓ Trenchless utility standard methods/equipment/practices/procedures/permitting/inspection
- ✓ Design and performance verification of a bridge column/footing/pile
System for accelerated bridge construction

NEW BUSINESS

*****The following items were approved by e-mail ballot following the March 28, 2014 meeting**

1. IHRB-14-01 Flood-Estimation Comparisons for Small Drainage Basins in Iowa
USGS has set aside some matching funds for this project to begin work in April. This item is for requesting a formal proposal from USGS to be addressed at the April 25, 2014 meeting. This request is not for approval of funds, but for approval to request a sole-source proposal for this project due to the expertise within the USGS staff and due to the availability of matching funds.

Item carried with 13 Aye, 0 Nay, 2 Abstaining.

2. IHRB-14-06 Embankment Quality and Assessment of Moisture Control Implementation
The typical timeline for development and approval of final RFPs is the May or June meeting, with proposals due at the September meeting. Contracts for this work are usually finalized in October. This schedule would essentially lose an entire year of data collection for this project, as most earthwork is concluding around that time of year in Iowa. Since the Board typically does not receive any proposals for earthwork research from any institutions besides Iowa State University, this item is for requesting a formal proposal from ISU to be addressed at the April 25, 2014 meeting. This request is not for approval of funds, but for approval to request a sole-source proposal for this project due to the expertise within the ISU staff and due to the compressed timeframe necessary to ensure data collection during 2014 construction.

Item carried with 13 Aye, 0 Nay, 2 Abstaining.

ADJOURN

The next meeting of the Iowa Highway Research Board will be held Friday, April 25, 2014, in the East/West Materials Conference Room at the Iowa DOT. The meeting will begin promptly at 9 a.m.

A handwritten signature in black ink that reads "Mark J. Dunn". The signature is written in a cursive, flowing style.

Mark J. Dunn, IHRB Secretary